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THE OPERATION AND RESULTS  
of the  
HOG PRODUCTION CONTROL PLAN  
in  
D E N M A R K  
by  
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Washington, D. C.,  
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### SUMMARY

From 1920 to 1932 hog production in Denmark expanded rapidly. Prewar levels of production were reached in 1923 and since that date the annual hog slaughter has more than doubled. This expansion followed closely the upward trend in dairy production due to the important place occupied by skim milk in the hog feeding practices in Denmark. Production is almost entirely confined to bacon type hogs and production and marketing problems are characterized by an almost complete dependence on the bacon market in the United Kingdom. Exports represent 80 percent of the total slaughter and in some years as much as 99 percent of the bacon exports have been shipped to England.

Up to 1926, Denmark met little competition in the British market from bacon produced in other continental European countries. In that year, however, sanitary restrictions on British imports of continental fresh meat forced Netherlands to turn its extensive fresh pork export trade into bacon. From 1926 to 1932, the Baltic States and Poland, heretofore virtually unknown in the British bacon trade, entered the field by subsidizing their pork industries. By 1932 the resultant heavy supplies of cured pork reaching British markets from all sources had so reduced prices that reduction in hog numbers in Denmark was a logical response. Since January 1932, when the Danish hog census returns indicated an all-time record high level, reduction in numbers has been urged officially.

A reduction in hog production was moreover necessitated by action of Great Britain in late 1932 in restricting imports of bacon by voluntary quotas or agreements. In accordance with a recent trade treaty Denmark is assured of 62 percent of the British import business a/ in cured pork but progressive reductions in the quota for Denmark exceeded the rate of reduction in hog numbers and the Danish government recognized the necessity of instituting measures to bring about a further reduction and to control production.

Largely as a result of the British policy of restricted cured pork imports, the Danish Hog Control Law became effective in February 1933. Danish agricultural affairs are managed principally through a Council representing farmers' organizations. The Ministry of Agriculture is almost exclusively an administrative body, leaving policy-making to the Council. The law empowers the Minister of Agriculture, with the approval of the Council, to administer certain regulations for the control of hog production and slaughter. In addition to setting up the necessary administrative machinery and providing penalties for non-compliance with the regulations, the outstanding authority granted the Minister is that which allows him to:

a/ The 62 percent applies only to the import business with non-Empire countries.

- a. Impose and collect fees on hog slaughterings.
- b. Fix one price for a given number of hogs and a lower price for "surplus" hogs.

#### Objects of the Hog Control Law

Briefly summarized, the objects of the Danish Hog Control Law are to:

- a. Reduce Danish hog production to the degree made necessary by British pork import quotas and the requirements of the home market.
- b. Restrict cured pork exports to Great Britain to the amount admissible under British import restrictions.
- c. Maintain the domestic bacon market price at the level of the British market price, in which the leading problem is the disposition of so-called "surplus" hogs.

#### Control methods employed

The following is an outline of the principal control features in the Danish scheme:

- a. Issuing cards to producers for the probable number of hogs which the British and home markets will take and paying for such hogs a price determined by prevailing bacon prices in Great Britain.
- b. Discouraging production in excess of the above amounts by paying a substantially lower price for hogs for which cards have not been issued.
- c. Making up from a special fund the losses incurred in the marketing of surplus bacon and pork, the fund being derived from slaughter taxes and special fees.

The method of allotting hog cards to producers is based upon a calculation which takes into consideration:

- a. The assessed value of land in the farm.
- b. The amount of skim-milk, or its equivalent in buttermilk or whey, used by the farmer in 1932.
- c. Deliveries of hogs made in 1932.



In addition, each farm is allotted 5 cards regardless of its size. In no case, however, is a producer allowed cards in excess of the number of hogs delivered in 1932. There have been controversies in respect to the bases of prorating "cards" among producers and changes effective January 1, 1934 were recently made to satisfy some of the objections to the original formula of allotments.

#### Financing and operation of the control plan

Administration of the plan is financed as follows:

- a. A tax of 48 cents (Kr. 2) a/ per head on all hogs weighing over 110 pounds (except old sows and boars) slaughtered for both domestic and export trade. Tax became effective March 6, 1933.
- b. An additional special fee paid by slaughterers and collected by them from producers for each bacon hog marketed without a permit card. The fee amounts to the difference between the British market price for bacon and the prices realized from the marketing of surplus hog products in other foreign markets.

Prices and special fees are published every Saturday, effective for the following week. The committee in charge of the plan buys from bacon factories all supplies at the prevailing British price, which the factories are unable to dispose of under the British import quota, or at home at the price set. Losses from sales of this surplus are expected to be met from the fund secured from the slaughter taxes and special fees.

The Danish hog control plan does not restrict production to a specified total number of hogs but influences production by the low prices paid for production in excess of the allotment of "cards". The fee payable for the slaughter of hogs without cards lowers the net price paid to farmers for dressed hogs with cards was 13.8 cents per pound. Surplus production is discouraged by increasing the fee.

Various methods have been adopted to dispose of the surplus or the marketings in excess of the British quota and domestic consumption at the British price level. The export movement of countries other than England has been subsidized and reciprocal trade agreements have been concluded. Shipments to foreign countries other than England have not, however, assumed great proportions and have never exceeded three percent of the total of weekly shipments. Accumulated stocks have been

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a/Conversions from Danish to U. S. currency have been made at average rate of exchange prevailing during the first week of October excepting for prices pertaining to specific dates, in which cases the exchange rates for the particular dates were used.

reduced somewhat by selling sides to hog producers at low prices (5.7 cents per pound). The problem of disposal of surplus supplies still exists.

#### Results of the plan to date

The Danish hog control plan has not been in effect long enough to indicate very definitely the effectiveness of the measure as such in hastening the reduction of total Danish hog numbers. Such a sharp reduction in hog numbers had taken place prior to the adoption of the plan that further reductions and the surplus problem have been considerably simplified. From July 15, 1931, the peak point, to April 15, 1933, the number of sows in Denmark declined 26 percent. That period included only about two months during which the control plan was in effect. By July 15, 1933, the number of sows was down 29 percent from the peak. This further decline in number of sows is attributed to the working of the card system.

In addition to a reduction in breeding operations to levels more closely in keeping with the export and home outlets the plan has brought about a liquidation in numbers of hogs on hand when the plan was put into operation. The plan apparently brought about additional marketings of live hogs during the nine months period January 1 to September 30 of 20,000 head compared to the corresponding period a year earlier. There is no special tax issued on slaughter of pigs under 110 pounds dressed weight and marketings of pigs of this weight have increased greatly. The control agency recognizes that marketing at this light weight is a means of reducing pork production and surplus numbers. Liquidation of the numbers on hand when the plan was inaugurated has therefore taken three forms, namely, substantial marketings of pigs weighing less than 110 pounds; additional marketings of live hogs, fully half of which were sows, and small marketings of bacon hogs without cards. Such marketings reached only 12,000 head in the period June-August 1933.

Market prices for domestic consumption have been fixed at the prices secured on exports to the United Kingdom. Only the quantities which can be moved at these prices enter the domestic marketing channels. Meanwhile, price conditions under which the plan is operating are somewhat unique. The British quota system has raised prices for the bacon so admitted to an exceptionally profitable level. The hog-feed ratio for those exports is 12, whereas the price paid for surplus production represents a ratio of 5. A ratio of 8 is considered adequate in Denmark.

In September officials anticipated that production and supplies would be brought in line with British and home demand by late 1933 or early 1934, provided there were no further drastic reductions in the British quota. Further reductions in the British quota, however, have been recently announced. Mr. Reed states that as a short-time measure for disposing of the surplus and for speeding up a reduction in hog numbers, the plan has been fairly effective. It is admitted that, from the



long-time viewpoint, the plan has serious defects. Undertainties with respect to the all-important British market outlet, however, have discouraged attention to long-time control plans. The report in full follows.

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AGRICULTURAL RELIEF MEASURES AND THE STATUS OF THE  
HOG INDUSTRY IN DANISH AGRICULTURE.

The economic crisis has necessitated some and caused other relief measures to be adopted in Denmark. About 80% of Danish exports are agricultural, and contracting export markets and falling prices have greatly lowered the agricultural income. Relief for agriculture has taken the form of currency depreciation, freezing farm debts, lowering interest rates, lowering farm taxes, and direct payments for relieving interest burdens. Measures have also been adopted for disposing of certain surpluses. Other crisis relief legislation is being considered by the Rigsdag.

A change has been made in the economic policy of the country which will have some influence in expanding foreign outlets for agricultural products. Denmark formerly exported, without limitation, its large surplus of agricultural products to the best markets which were available (principally England), and imported manufactured goods and raw materials for industry from those countries which could best supply them. Denmark is now faced with quotas, tariffs, and other restrictions in export markets, and the Government as well as the public in general feels that it is necessary to buy from those countries which buy from Denmark. Being a debtor country it is necessary for Denmark to have a favorable balance of trade. The machinery for bringing this about and carrying out the policy of reciprocal trading lies in the hands of the Exchange Control Committee, from which a permit for making imports and securing exchange for making foreign payments must be obtained. The function of the Committee is to reduce foreign purchases and to direct such as are necessary to those countries which have unfavorable trade balances with Denmark.

The hog and bacon industries rank first in point of value in Danish export trade. Denmark exports over 80% of the total hog production in the form of bacon, and 99% of the bacon exports were formerly sent to England. The hog industry is the result of a development which covers about fifty years, and is closely related to developments in the dairy industry and to grain supplies.

The hog industry has grown with dairy production. Prior to 1880 Denmark was a grain exporting country, but as competition from America and other new world countries increased, Denmark adopted the practice of feeding the home produced grain to livestock, and exporting live-

stock, and exporting livestock products. At present, livestock is the source of about 90% a/ of Denmark's agricultural income. The number of cows increased as cooperative creameries developed, and with the invention of the cream separator hogs were brought into the scheme to utilize the skim-milk. Most of the hogs are owned by dairy farmers, and skim-milk, buttermilk and whey are the protein supplements used most extensively in Danish hog feeding practices. There is no surplus of skim-milk, and the proportion of skim-milk in the hog ration depends on the supply of skim-milk and the number of hogs. The hog industry is not entirely dependent on the dairy industry for protein supplements, and commercial feeding plants make use of other feeds.

As hog numbers in Denmark increased, hog feeding operations became more dependent on grain supplies. In Danish cattle feeding, little grain is used. The cattle are fed principally on roughages, the concentrate part of the ration being made up of oil cake of various kinds. With hogs, however, considerable grain is used, and Dr. Jorg. Pederson estimates grain production, imports, and consumption for 1931, as follows:

Production and Imports - in thousand tons of 2,000 pounds

Danish production .....	3,494
Net imports unground grains .....	2,006
" " flour and grits (converted into grain) ..	<u>110</u>
Total: .....	5,610

Consumption

By slaughter hogs .....	2,579
" sows and boars .....	419
" horses .....	805
" chickens .....	661
Used for seed .....	265
" " bread and grits .....	518
" " beer and alcohol .....	<u>55</u>
Total: .....	5,302

a/ Studies by O. H. Larsen, Agricultural Economics Research Bureau, Royal Veterinary and Agricultural College, Copenhagen, show the percentage of the total agricultural income which is derived from livestock to be as follows:

Fiscal year 1929-30 .....	89.5%
" " 1930-31 .....	88.8%
" " 1931-32 .....	87.0%

Studies by Prof. O. H. Larsen, Det Landøkonomiske Driftsbureau, show that while the total arable land in Denmark has increased considerably, the percentage which is devoted to grain farming has been very constant since about 1880, and such slight variations as do occur have been due to the rotation of crops. The production per hectare has also increased with the extensive use of manure and other fertilizers, but as hog numbers outgrew domestic grain production, hog feeding operations became more dependent on imported supplies. Table I (Statistical Appendix) indicates the relationship of Danish hog production to dairy farming and grain supplies, and show the sharp decline in hog numbers during war years when grain imports were reduced.

DEVELOPMENT OF THE HOG AND BACON INDUSTRIES  
AND THEIR RELATIONSHIP TO BRITISH DEMAND FOR BACON.

The Danes, in a systematic and thorough manner, have developed and perfected their hog and bacon production with the idea of supplying the British market. During the early development of the hog industry three types were produced, - a lean bacon type for England, a short fatter type for export to Germany, and a type falling between these two extremes for the home market. Frequent restrictions on exports to Germany caused the Danes to concentrate on the type for England, and the home market has been educated to that type.

Danish Landrace sows are crossed with Large White (Yorkshire) boars, as this cross has been found most acceptable for producing the type of bacon desired on the British market. The Landrace sows are noted for fertility, heavy milking, hardiness and the production of strong, healthy pigs. The lack of quality in the Landrace has been overcome by using Large White boars. The present tendency in Danish hog breeding seems to be toward greater use of the Landrace and less use of the Yorkshire, because of the superior hardiness and feeding ability of the former.

Since the first cross only is recommended for bacon production, breeding centers were established in the 1890's so that farmers could secure purebred sows and boars of the two breeds for the production of bacon hogs. Selection is based on fertility, vitality and bacon producing ability. Landrace breeding centers increased fertility from 10.6 pigs per litter in 1921 to 11.3 pigs per litter in 1929. Breeding centers were originally under the supervision of the Provincial Agricultural Associations, and had some financial assistance from the State. Breeding centers are now supervised by a committee of the Co-operative Bacon Factories, assisted by the provincial livestock specialists. The centers are private owned, and to secure approval of the committee, breeding center owners must agree to a number of regulations, the most important being:



1. All breeding animals must be approved by the Committee and any animal not approved must be discarded.
2. Sows and pigs must be marked, and full records kept showing breeding dates, time of farrow, name of boar, number farrowed, number weaned. Sows which do not produce an average of 8 pigs per litter are not approved. a/
3. Pigs from parent animals indicated by Committee must be sent to testing stations.
4. Herd must be T.B. tested once each year.
5. Herd must have a veterinary inspection twice yearly.
6. Herd must be inspected by the Committee three times a year.

The veterinary inspections and tests are paid for by the State, and the Committee's expenses by the Cooperative Bacon Factories. Breeding centers have played a great part in the development of the hog industry in Denmark and the merits of the breeding center system have been given wide publicity wherever hogs are kept. Some producers, particularly the large operators, regard breeding center animals as pampered pets raised under hot house conditions and lacking in vitality. The 196 Landrace breeding centers sold 5,176 boars and 5,012 sows and the 28 Large White breeding centers sold 1,230 boars and 621 sows in the period July 1, 1929-June 30, 1930.

The efficiency of breeding animals is tested by the several testing stations. Four pigs (2 sows and 2 boars) from at least one litter of each breeding center sow are sent to the testing stations, where they are fed the same feeds under identical conditions. The pigs are fed from an initial weight of 33 lbs. to a bacon hog weight of about 198 lbs. and then slaughtered. Complete records are kept. The production of bacon suitable for English market requirements is foremost in Denmark, and the pigs are judged on the basis of export bacon production.

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a/ The sow which holds the breeding center record on the island of Fyn farrowed 142 pigs and saved 123 in 10 litters. Her 11th litter, 15 pigs, was born dead, and the sow was discarded.

The completed record shows:

Average all stations  
Sept.1928 - Aug.1929

Initial wt. ....	201.3
Final wt. in pounds .....	1.52
Feed units a/ per lb. gain .....	73.3
Dressing per centage .....	60.0
Percentage export bacon produced .....	35.1
Length of body in inches .....	12.6
Flesh consistency .....(Maximum 15 points)	12.2
Shoulder .....( " " " )	12.4
Thickness of back fat .....( " " " )	12.4
Distribution of back fat .....( " " " )	12.3
Shape and fullness of belly...( " " " )	12.3
" " " " hams....( " " " )	12.6
Finess of head, bones and skin( " " " )	12.3
Fleshiness .....( " " " )	12.3
Type and general appearance...( " " " )	

The breeding center owners and committees are able to determine the efficiency of breeding animals from the records of their offspring. The records are incorporated with the pedigree and prospective purchasers are able to select breeding stock from proven lines of breeding. Stud records go back as much as 27 generations at present, and pedigrees are a record of performance. Present official testing stations, which number five, do not have sufficient capacity to take care of all the pigs which are offered. Some are tested at private stations. Large operators who produce their own breeding stock do most of their own testing, and in many cases subject the whole litter instead of four pigs to the tests, maintaining that breeding center owners naturally select the four best pigs for tests, and that such is not a true indication of the sow's worth as a breeder.

In addition to the breeding centers and testing stations a number of experimental feeding stations are maintained on selected farms under the supervision of the Animal Husbandry Department of the Royal Veterinary and Agricultural College. Whole litters are used in experiment station tests, and feeding trials with different feeds are conducted. In addition to the feeding trials, Prof. Jespersen, who directs the work, compiles records showing the efficiency of sows and boars in producing pigs satisfactory for export bacon production.

Danish hog production is largely in the hands of the dairy farmers. Some producers raise their own feeder pigs, others depend on specialized feeder pig producers for feeder pig supplies. Some of the

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a/ A feed unit in Denmark is 2.2 lb. barley or its equivalent in other grains or 13.2 lb. skim-milk.



larger operators have heretofore produced more feeder pigs than their own operations required, and have disposed of the surplus on the feeder pig markets. Commercial feeding plants or "pig factories", as they are called in Denmark, depend entirely on feeder pig producers for supplies. As numbers of hogs have increased in Denmark, production has spread into the hands of others than dairy farmers. In the villages it is not uncommon for the small tradesmen, shopkeepers and others to have one or more sows for the production of feeder pigs.

Feeding practices in Denmark are rather uniform as a result of the work of the experiment stations, which hog producers follow closely. Barley, rye, corn and wheat are the principal grains used, the proportion depending on the cost of the different grains. Many reports come from Denmark about corn fed hogs making soft and yellow pork, but when corn is cheaper than barley it is used extensively in Danish hog feeding. Skim-milk, buttermilk and whey are the principal protein supplements used, and their advantages and the superior quality of bacon made from skim-milk fed hogs is given considerable publicity in the Danish and English trade journals. However, commercial feeders in Denmark make use of other protein supplements, such as tankage, bran, tapioca meal and imported oil meals, and no objection has been raised about the quality of bacon produced. Roots are used to some extent, particularly for sow feeding, and are also recommended for bacon hog feeding from November to February, when there is a tendency for hogs to get too fat for the best grades for the British market.

The hog production cycle in Denmark, according to Dr. Pederson, Institute of History and Political Economy, Copenhagen, is of about four years duration, and has a tendency to coincide with that of the United States and Germany. Seasonal production and marketings, with the exception of a slight marketing peak in the fall of the year, have been largely eliminated by spreading farrowings throughout the year, and by feeding practices. Such a system is necessary in order to supply England with regular quantities of mild cured bacon.

Cooperative factories have been established for processing the bacon and at present the 61 cooperative factories handle about 85% of the total bacon hog slaughter in Denmark. Producers are paid on the basis of dead weight and bacon grade a/, the grades corresponding to a/ On Sept. 22, 1933, the London price of Danish Green Sides was set at 18.31 to 18.77 cents per lb. During the following week Danish hog producers delivering to co-ops. were paid as follows:

Grade 1 -	13.62	cents	per	lb.	dead	weight
" 2 -	13.43	"	"	"	"	"
" 3 -	13.24	"	"	"	"	"

(for hogs weighing 132 - 146 pounds dead weight)

Deductions from the above for over and under weight were:

147 - 154 pounds deduct	0.77	cents	per	lb.
155-165	"	"	1.53	"
131-123	"	"	.38	"
122-110	"	"	.96	"

British market grades. Prices are set each Friday for the following week by a Committee from the Federation of Cooperative Bacon Factories, after the London and Manchester Provision Exchange prices have been fixed. The Danish price is based on the English price, but prior to the imposition of the quota, the Committee tried to keep hog price movements within as narrow range as possible. This method of paying for hogs has resulted in deliveries of hogs of uniform and desirable weight and finish. Profits are distributed at the end of the year in accordance with deliveries made by the individual.

Private factories number 21, and in general are smaller than the cooperative factories. They pay producers on the basis of dead weight with a weight differential, but do not differentiate between grades, and in order to meet competition of the co-ops and make up the difference in profit distributions, pay .5 cents per lb. more than the co-op price.

Danish bacon factories have modern equipment, and slaughtering is conducted similar to American methods. An electrical device is generally used for stunning the hogs prior to sticking. It is said that a better job of bleeding can be obtained from this method. Other unproven claims are also made for the instrument, and its use will likely be required by legislation or decree.

Cutting is the same as in the United States when Wiltshire sides are made. The cure used is a mild saltwater-saltpeter treatment, varying in strength with the season of the year. The shoulder blade pocket is filled with salt, the thick parts of the side pumped with the solution under pressure, and the sides are kept in the brine for four days. After draining two days, the sides are packed four to a bale in burlap and are ready for shipment. Grading is done by Government veterinarians prior to curing. Grades 1 and 2 are shipped to London, grades 2 and 3 to Manchester, and only grade 1 is sent to Scotland.

Most of the bacon is carried to England under refrigeration in Danish boats. In order to insure fast and regular deliveries the bacon boats have regular runs. Most of the bacon is shipped from Esbjerg via Harwich, but boats also leave regularly from Copenhagen. Butter, eggs, fish and poultry are also carried in the bacon boats to England, and coal, flour and other freight makes up the return cargo.

Sales for the bacon factories are made in England by the Danish Bacon Company Ltd., and other importing firms acting as commission agents. The wholesalers in England wash the sides, dust with pea meal and smoke them, or dry them pale if customers prefer.

Danish bacon factories utilize by-products so far as possible, but such utilization has not reached the development known in the

United States. The head and feet of the hogs are cured for export, mostly to South Africa. The fillet, neck bones, and shoulder blades go to the home trade. Heart, tongue, liver, and kidneys go to both export and home markets. Blood is used in blood meal for fertilizers and other offal and condemned carcasses are made into tankage. Different kinds of sausages are made from trimmings and carcasses unsuitable for the English or home market. There has been an increase in the manufacture of pharmaceutical preparations from by-products.

All of the bacon factories make lard, but due to the method of cutting Wiltshire sides only about 3% of the hog is made into lard. Danish lard is principally made from leaf and gut fat. Some factories make a pure leaf lard, and others render all the fats together. Steam rendering methods are used and the lard is packed in tierces, in boxes holding 2 27.6 lbs. blocks, and in cartons. Pure leaf lard is put up in bladders. Some factories mix onions with lard, and sell it as a spread to the home trade. Danish lard, being made largely from leaf and gut fat, does not have the keeping qualities of American lard. A great lack of uniformity in Danish lard results from the large number of small factories making lard and using different proportions of the several fats. The factories have no central sales agency for lard, and exporters are unable to assure customers regular or uniform supplies. In Danish shops, American lard is sometimes mixed with Danish lard to give the latter better keeping qualities. Most of the Danish lard is exported (Statistical Appendix Table VIII).

A strict health inspection and veterinary control is exercised over bacon factories and slaughter-houses by the Ministry of Agriculture through the Meat Export Control Service. Laws regulating the export of meat were first passed in 1894, amplified in 1903, and further extended in 1908. Orders and regulations issued under these laws by the Minister of Agriculture give precise instructions regarding the inspection, handling, marking and grading of meat for export and home consumption. In cooperation with the bacon factories, the Minister has also prescribed the method of cutting, curing and grading of bacon sides and the sanitary measures which must be observed in bacon factories. The regulations have resulted in uniform butchering, trimming and curing. Veterinarians stationed at the factories see that the regulations are followed. The control exercised by the Ministry of Agriculture over bacon production has been of great assistance in the operation of the present Hog Regulation Scheme.

The hog industry aims at the production of bacon hogs only. Bacon hogs make up about 98% of the total slaughter in Denmark, and while the Danes do not eat much bacon, pork on the domestic market comes principally from bacon hogs.



By reason of the high degree of development in the hog and bacon industries, Denmark has been more able than any other bacon exporting country to supply British market requirements. Danish bacon has the advantage on British markets because (1) importers and wholesalers have been assured of adequate, regular and uniform supplies, and have been able to develop their distributing agencies accordingly, (2) the British retail trade has been supplied with bacon in the form and of the type which can be cut to the best advantage, and (3) the British consumer's preference for lean mild cured bacon has been met.

#### PRELIMINARY CONTROL OF BACON SHIPMENTS

For some time prior to the effective date of the British quota a/ it was realized in Denmark that the English market was being flooded with bacon, not only from Denmark but from other continental countries which were copying Danish methods with varying degrees of success. The National Government in Great Britain, recognizing the position in which British hog producers had been placed as a result of unlimited imports and other causes, had appointed the Pig Industry Reorganization Commission which considered and recommended, among other things, the quantitative limitation of bacon and ham imports. Danish hog numbers had reached a peak (Statistical Appendix Table II), prices on the English market were at new low levels, and while the effect of low English prices had been partially offset by depreciation of the krone, Danish hog production was unprofitable (Statistical Appendix Table V). After the publication of the January, 1932, hog census, Danish farmers were urged to reduce numbers. A decline in production as a result of pro-

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a/ In late 1932 the British Government inaugurated a system of voluntary quotas for imports of bacon and hams from non-Empire countries. This measure was adopted as a part of a program for stimulating and improving the English hog industry. The quotas for an initial period of three months became effective November 23, 1932 and represented a 15 per cent reduction of the average monthly shipments from August to October, 1932. By four successive reductions of  $2\frac{1}{4}$  per cent each month, the quota was further reduced about 10 per cent by August 22. The quota continued more or less unchanged after August 22 due largely to failure in reaching a voluntary agreement among the exporting countries on a British proposal to reduce current shipments an additional 12 per cent. Effective November 10, however, the plan of voluntary quotas was abandoned, importers were required to secure licenses, and a further reduction in the quota for the period from November 10 to February 1, 1934 was announced. The new quota equivalent to 60,000,000 pounds monthly compares with monthly imports of 108,000,000 pounds during the period August to October, 1932. The new quota permits monthly imports from Denmark of 39,000,000 pounds and represents a reduction of 45 per cent from the average monthly imports of 71,000,000 pounds during the three months period immediately preceding the adoption of the British quota plan.

paganda and the unremunerative prices of 1932 was in progress, but the unexpected moving up of the effective quota date caught Denmark with a surplus. The Dutch had started their control measures in August, 1932, and by November of that year had disposed of a considerable part of their surplus.

When negotiations relative to the "voluntary" limitation of imports started in London in early November, 1932, the Danish Federation of Bacon Factories worked out a plan for Denmark to follow. A committee, which had been appointed some time previous for the purpose of encouraging a reduction in hog numbers, finding new markets, and other purposes, was used to administer the plan. The factories were assessed 42 cents (Mr. ~~2~~) for each bacon hog slaughtered in order to provide a fund for disposing of the surplus. The factories continued to pay producers the price determined by British market conditions, less the 42 cents tax, and no reduction was made in killings a/.

The Danish Government had accepted the quota, and the Minister of Agriculture appointed a committee b/, composed of bacon factory managers and presided over by a farmer, to control shipments to England and keep them within quota limits. Export to England was controlled through the issue of export certificates by veterinarians at bacon factories, who issued only the number which the M. of A. Bacon Committee prorated to each factory on the basis of previous shipments.

Quota amounts were shipped to England, and pork was forced on to the home market at the English price by limiting quantities. Supplies accumulated at the factories, and such quantities as could be placed in other European markets were exported (Statistical Appendix Table IV) and losses were defrayed ~~from~~ from the fund. Bacon was also sold to hog producers at a low price in order to reduce the surplus, losses being made good from the fund.

The measures adopted during the preliminary control were made possible of operation by the control which the Ministry of Agriculture exercises over slaughter and export and by the cooperation of the co-operative and private bacon factories working through their joint Federation, and the fact that they slaughter 98% of all the hogs killed in Denmark. Considering the situation, the preliminary control was fairly successful, but since the British quota was being progressively reduced, and bacon was accumulating at the factories and it appeared that the higher prices resulting from the quota might encourage produc-

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a/ Publication of the weekly number of hogs killed for export and home consumption was suspended when the quota became effective November 22, 1932. Under the quota system, publication of the figures would not have any effect on English prices, but would have a bearish effect on home pork prices. b/ Hereafter called the M. of A. Bacon Committee.



tion or at least stay the decline, it was necessary to extend the control and secure additional measures by legislation.

/ THE PERMANENT CONTROL PLAN.

1. Law and Decrees.

In keeping with the Danish farmers' self-reliance and traditional policy of solving their own problems, the hog and allied interests, making use of the experience gained under the preliminary control, prepared the permanent scheme. It was accepted by the Minister of Agriculture and presented to the Rigsdag which passed it with little debate in February, 1933. The law was made operative by subsequent ministerial decrees.

The law briefly states that the Minister of Agriculture may, with the approval of the Agricultural Council a/, take measures to regulate slaughter and limit production. Authority is also granted (1) to fix one price for given numbers of hogs and a lower price for surplus hogs, (2) to impose and collect fees on slaughtered hogs, (3) to set up the necessary agencies for the operation of the scheme, and (4) to impose fines for violation of the regulations.

2. Objects, Policy and Methods.

The objects of the measures which have been adopted are: (1) to reduce production to conform to British quota requirements and home market consumption, (2) to fill the British quota and maintain the home market at the English price, (3) to dispose of the surplus.

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a/ In Denmark, the Ministry of Agriculture is an administrative agency. Educational work, propaganda, market studies, reports, and other work are undertaken by the farmers themselves through the Agricultural Council (Landbrugsraadet) which represents the principal organizations relating to Danish agriculture.

The board of the Agricultural Council is made up of:  
6 members representing The Federation of Danish Cooperative Societies,  
6 " " The Federation of Agricultural Societies (made  
up principally of the operators of middle sized farms), and  
6 members representing The Federation of Danish Small Holders Societies.

The last two groups represent the majority of dairy farmers and hog producers. The Association of farmers operating large farms is not represented on the Agricultural Council.

Export markets, other than England, for bacon and pork made from bacon hogs, are in general, unremunerative to the Danes, and the policy of the control agency is to stop shipments to such markets when the present surplus is removed. Should such markets offer an opportunity for shipment at a profit, the policy will undoubtedly change. Export markets for heavy pork and sows are limited, and such as exist for Danish pork will be used as far as possible in disposing of sows for which no home market exists.

The methods by which the control agency is attempting to attain the objects are:

1. Issuing hog cards to producers for the probable number which the British quota and home market will take, and paying a price determined by English market conditions for hogs delivered with cards,
2. Discouraging surplus production by paying a lower and unremunerative price for hogs without cards, and
3. Defraying losses on sale of surplus bacon and pork from a fund derived from a slaughter tax and special fees.

### 3. Administrative Agencies.

The Minister of Agriculture, with the approval of the Agricultural Council has appointed the Hog Regulation Committee (Svine-regulerings Kommissionen) to administer the scheme. The committee is made up of five members as follows:

2. representing the Cooperative Bacon Factories,
1. representing the Private Bacon Factories,
2. representing the Agricultural Council. One of the Agricultural Council representatives is a member of the Agricultural Associations, and the other a member of the Small Holders' Societies.

The committee has recommended and the Minister has appointed a secretary a/. The members of the committee are not paid a salary,

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a/ The Secretary is Mr. C. Troutman, who is also secretary of the M. of A. Bacon Committee, Secretary of the Federation of Danish Bacon Factories (the Joint Association of Cooperative and Private Bacon Factories), and secretary of the Federation of Cooperative Bacon Factories. He is directing the scheme.

but do receive standard fees and expenses when attending meetings.

When the scheme became operative a clerical force of about 200 in the Committee's Copenhagen office was required in order to compile the necessary information for establishing the basis for prorating cards. At present a force of about 40 is maintained and they are able to handle all of the correspondence and detail of the Copenhagen office. The personnel and expenses of the Hog Regulation Committee are paid from the fund derived from slaughter taxes and special fees.

Municipal Hog Regulation Committees of three members, two of whom must be hog producers, have been set up in about 1,400 parishes or communities. They are recommended by the parish boards and appointed by the Minister. They are familiar with the operations of farmers in their respective communities, have access to the necessary data for determining the basis for allotting cards, and prepare the basis for card allotments to each farmer. Their determination is checked by the Copenhagen office and if incorrect is returned. The cards are issued by the Hog Regulation Committee, but distribution is made through the Municipal Committees. Protests and requests by producers are also made through the Municipal Committee. The Municipal Hog Regulation Committees receive 2.1 cents for each card issued plus expenses incurred, payment being made from the fund.

The M. of A. Bacon Committee continues to function as the agency controlling the quantity exported to England, and also sets the price of hogs without cards and the amount of the special fee.

The Bacon Committee of the Cooperative Factories continues to set the price of hogs with cards on the basis of the London market as was the case prior to the imposition of the quota.

The Hog Regulation Committee, the M. of A. Bacon Committee and the Bacon Committee of the Cooperative Factories, have headquarters in the same office in Copenhagen and work in close cooperation.

#### 4. Financing.

The plan is financed from a fund which is obtained as follows:

(1) A tax of 42 cents per head is paid on all hogs weighing over 110 lbs. (except old sows and boars) which are slaughtered in Denmark for human consumption. Bacon factories pay the tax direct to the fund, it is collected through municipalities on hogs slaughtered in public slaughter-houses, and through the veterinary inspector in other cases. This tax was imposed March 6, 1933. (Appendix B.)

(2) Bacon factories pay a special fee into the fund for each bacon hog bought without a card. The amount of the fee corresponds



to the difference in price between hogs with cards and hogs without cards. (Statistical Appendix Table III).

(3) A special fee is paid into the fund on all hogs weighing over 110 lbs. (except old sows and boars), which are slaughtered for human consumption in plants other than bacon factories. Collection is made as in (1). The fee varies with the difference in the price of bacon hogs with cards and bacon hogs without cards, and is intended to correspond to the payment made under (2). (Statistical Appendix Table III).

#### 5. Price Fixing.

The price paid to producers for hogs delivered with cards is fixed each Friday by the Cooperative Factories' Bacon Committee. The price is based on and fixed after the London price is made. This is the procedure which was followed on price quotations prior to the control. The price paid to producers for hogs without cards and the amount of the special fee is fixed weekly by the M. of A. Bacon Committee. The price is based on the price received for the surplus, and the fee is the difference between the card price and without card price. Hogs delivered without cards are not considered in annual profit distributions by co-ops. The prices are published in Danish papers Saturday morning and are paid for hogs delivered during the following week.

The price of hogs delivered with cards and without cards is the same to the bacon factories because of the payment of the special fee. The Committee has an agreement with the bacon factories whereby the Committee will take all surplus bacon at the English price. The factory ships its allotment of the British quota to England, sells such a quantity as is possible to the home market at the English price, and the remainder to the Committee at the English price. This prevents dumping of surplus stocks on the home market at reduced prices. Private slaughter-houses are unable to undersell the bacon factories because of the special fee. The Committee controlling supplies of bacon and pork from bacon hogs, has a virtual monopoly on the export of such meat, and sells it in foreign markets, other than England, and to Danish producers (when heavy surpluses occur) for what it will bring and defrays losses from the fund.

Price fixing for bacon hogs without cards is the means of discouraging surplus production. While the control has due regard for the interests of producers and no doubt desires to pay as high a price for hogs without cards as export market conditions will permit, they are charged with reducing production, and must fix prices accordingly. Deliveries of hogs without cards were relatively small through June, July and August, 1933 (totaling about 12,000), and the without card price was kept slightly below a profitable level (Statistical Appendix

Table V and Chart II). The control agency now regards this as a mistake, and feels that production was encouraged by the price paid for hogs without cards in July and early August 1933. When it became apparent that farmers had been withholding deliveries and that deliveries of hogs without cards would increase in September and October the price for them was dropped and the special fee correspondingly increased. The extra increase in the special fee in late August was a method of drawing on co-op reserves to assist in defraying losses on bacon sold to producers at 5.8 cents per lb. (special fee for August 25, 1933, and subsequent dates, Statistical Appendix, Table III).

6. Prorating and Allotment of Hog Cards.

The control became operative April 22, 1933, and from that date to June 10, hog cards, which permitted producers to obtain the higher price for hogs, were issued on the monthly basis of  $1/12$  of each producer's 1932 deliveries less 20%.

Since June 11, 1933, the basis for prorating the allotments of hog cards has been:

- (1) 5 cards for each farm, regardless of size,
- (2) 1 card for each \$212 of assessed value of farm land,
- (3) 1 card for each 4,400 lbs. of skim-milk, (or the equivalent of 4,400 lbs. of skim-milk in buttermilk or whey) taken in 1932, and
- (4) a number of cards equal to  $1/7$  of the number of hogs delivered in 1932.

In no case is a producer to have cards in excess of the number of hogs delivered in 1932.

Specialized feeder pig producers are allowed 5 cards for each sow. Marketings by testing stations and experiment stations have not been reduced, but the stations are not permitted to market hogs in 1933 in excess of the number marketed in 1932. Breeding centers, which naturally are adversely affected by a decreased demand for breeding stock were given additional cards so that pigs which would ordinarily be sold for breeding purposes might be marketed to bacon factories. Cards issued to breeding centers are not transferable and can be used only by the breeding center to which they have been issued. Provincial Livestock Specialists are charged with seeing that the regulations regarding testing and experiment station and breeding center cards are observed.



Allotting cards on the above basis would result in a reduction from 1932 deliveries of approximately 20%. The plan, however, does not contemplate that deliveries of hogs with cards shall be 80% of 1932 deliveries. The above is used as the basis for prorating only, and the actual issue of cards is based on the English quota and probable demand for pork at the English price on the home market. For example, a producer might be entitled to 240 cards on the above basis or 20 cards each month. But if the British quota and home market conditions necessitated a reduction of 10% in deliveries of hogs with cards, he would get only 18 cards.

Cards are issued and allotted to producers every two months. The cards have a different color for each month and must be used during the period for which they are issued. With the exception of those issued to breeding centers, the cards are transferable, and may be traded or sold. They have come to have a value approximating the difference in price between hogs with cards and hogs without cards, or the amount of the special fee.

Little difficulty has been encountered from counterfeits. About 180 counterfeit cards were printed outside of Denmark, and about 50 were sold to Danish farmers. These were detected and only 8 hogs were delivered with counterfeit cards. The responsible parties were convicted in the courts.

The basis for prorating allotments has met with some difficulties. While the records kept by bacon factories and creameries have made available most of the necessary data regarding skim-milk and hog deliveries, it has been difficult to check on deliveries to private and municipal slaughter-houses, and skim-milk purchases made from farmers. Statements are necessary in these cases and cards are not issued until full and authentic information of the individual's basis is obtained.

There has been dissatisfaction among certain groups of farmers over the present basis for prorating allotments. Farmers who ceased to raise hogs prior to 1932, because of low prices or for the purpose of cleaning up diseases on their farms, do not receive cards due to the clause which states that cards shall not exceed 1932 deliveries. "Pig factories" are severely cut in numbers of cards by the 5 card per farm, \$212. land value, and skim-milk clauses. This group feeds about 3% of the hogs delivered annually to bacon factories. Most large farmers have heretofore not been interested in hog production. They have specialized in grain farming. The profitability of hog production, provided that cards can be obtained, makes the industry attractive to all groups. Grain producers, faced with low grain prices maintain that the favorable corn hog ratio (Statistical Appendix Table V) justifies protective measures for bringing about higher grain prices, and that low grain prices and the card system permit

inefficient feeders to make a profit, while efficient feeders are limited in their operations. This group may be pacified by a grain tariff. Others maintain that the quota has been given to the Danish government, and that it is for the benefit of Danish agriculture as a whole, and not merely for those who delivered hogs in 1932. Many officials seem to share this opinion.

The small-holders and operators of middle sized farms who deliver most of the hogs are in a better position, but are not entirely satisfied with having to reduce production, even though the advantage of reduced production is made evident by higher prices. The Hog Regulation Committee represents the hog producers, and will likely see to it that their interests are protected. Denmark comes nearer to supplying British demand for bacon than any other country, and with the British market foremost in their minds, the Committee appreciates the advisability of keeping hog production in the hands of the experienced. The scheme, as it stands, is not a political development, but has been worked out for hog producers by their representatives and is administered by them. While the dissatisfied groups are not important politically, the hog interests, in order to prevent the scheme from being involved in parliamentary debates, have agreed to the following basis for allotments, and it will become effective January 1, 1934:

- (1) 5 cards for each farm.
- (2) 1 card for each \$212. of assessed land value, with the reservation that for farmers who have not delivered hogs in the period October 1, 1932 - September 30, 1933, hog cards will be calculated as follows:

For the 1st \$2,121. of assessed land value, 1 card for each \$212.  
For \$2,121 - \$ 6,363 of assessed land value, 1 card for each \$424.  
For \$6,363 - \$12,726 of assessed land value, 1 card for each \$636.  
For \$12,726 - \$21,210 of assessed land value, 1 card for each \$848, with a maximum of 40 hog cards.

- (3) 1 card for each 3,300 lbs. skim-milk, or its equivalent in buttermilk or whey, taken in the period October 1, 1932 - September 30, 1933.
- (4) A number of cards equal to 1/7 of the deliveries of hogs from October 1, 1932, to September 30, 1933.
- (5) The sow dispensation is abolished (i.e. the 5 cards per sow allowance for feeder pig producers).
- (6) Land tax value will not be calculated at more than \$109 per acre.

- (7) Special dispensations may be made in cases where deliveries have not been made because of disease, fire and such causes.

Testing and experiment stations, and breeding centers will not be affected.

Under the new scheme, all farmers can have cards, but the bulk will be kept in the hands of the regular producers, who have the advantage under the skim-milk and delivery clauses. "Pig factories" which have used skim-milk will be on an improved basis, and dairy farmers who have not fed hogs but who have received skim-milk and sold it to hog feeders, can obtain cards which they can sell. Large farmers who have not delivered hogs heretofore will be limited to 40 cards, the farm allowance, and skim-milk allowance. Farms which are near cities or which, for other reasons, have a high land value will have no advantage in securing cards because of the limitation of land value to \$109 per acre for purposes of calculation. Specialized feeder pig production will likely be curtailed and such production will shift to some extent to regular feeders who will keep sows in order to employ their labor and make good the reduction in feeding operations.

The new scheme is a compromise, and is simply a new basis for prorating or distribution of cards. The total numbers of cards will not be affected and will continue to be issued by the Hog Regulation Committee on the basis of the British quota and the home market.

#### 7. Sale and disposal of the surplus

Shipments to England have been kept within quota limits as under the preliminary control by prorating export certificates in accordance with previous shipments. The export certificates are handled through the veterinary inspectors at the bacon factories.

Pork and bacon for the home market is limited to the quantity that can be moved at the English price. The bacon factories kill about 98% of the total slaughter in Denmark and other slaughterers are unable to undersell the bacon factories because of the special fee which equalizes the cost of hogs with cards and hogs without cards to all buyers.

The surplus has been disposed of where possible in other foreign markets at such prices as are obtainable, the factory receiving the English price and losses defrayed from the fund. Efforts to extend foreign markets for both beef and pork have been made by sending delegations to different countries, and it appears that the reciprocal trading idea is responsible for such expansion as has taken place in markets other than those where Danish pork



has an advantage in climbing tariff walls with the aid of the fund. Shipments to foreign markets other than England have, however, not assumed great proportions, and have never exceeded 3% of the total of weekly shipments (Statistical Appendix Table IV). Belgium and Italy seem to be the countries to which Danish exports of bacon and pork have shown the greatest increase. Belgium has a a/ global quota on meat imports which operates through an import license and fee. Denmark, being able to undersell most countries because of the fund, has a decided advantage and has been getting well over half of the Belgian business, and in May, 1933, did 87% of it. Shipments to Italy have been mostly slaughtered sows, but such shipments of bacon and pork from bacon weight hogs as have been made, have been assisted over Italy's tariff of \$6.60 per 100 lbs. by the fund. Exports to Germany have shown a great decline, compared with former years, due to Germany's prohibitive tariff on meat imports. b/.

Accumulated stocks have been reduced somewhat by selling sides to hog producers at low prices, losses being defrayed from the fund. This was done in March and again in September when sides were sold to producers at 5.8 cent per lb. The sides were stamped and labelled showing that the meat was not to be resold and consequently has to be consumed by the producer and his family. This plan naturally removes some demand from the home market.

While the fund permits the sale of surplus pork and bacon at low prices the surplus has not all been sold. Prior to the imposition of the quota, it was customary for bacon factories to carry stocks of about 100,000 sides. Present stocks are much in excess of this amount, and some old bacon has been put down in dry salt. The decline in numbers and marketings has not as yet brought deliveries in line with quota and home market requirements, and frequent and sometimes unexpected reductions in the British quota have made it difficult to regulate the card issue. The surplus problem still exists.

Lard sales do not receive any assistance from the fund. The proportion of the whole hog made into lard has increased from about 3% to about 4%, as a result of heavier trimming of the neck and belly, which in turn permits the export of a greater quantity of higher priced bacon to England under the quota. Lard sales, particularly to Germany are handicapped by tariffs. Stocks of lard in Danish bacon factories and refineries are regarded as being of record amounts, but

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a/ A quota which limits total imports but which does not allocate quotas to the various sources of imports. b/ Reports received from official Danish sources on October 9, state that a sale of 25,000 carcasses to Germany has been arranged.

stocks figures are not available.

The export of live hogs is outside the operation of the scheme, and such exports are not aided by the fund. Exports of live hogs have shown an increase (Statistical Appendix Table VI). It is estimated that about half of the live hog exports are sows. Most of the increase is due to operations of the Exchange Control Committee coupled with reciprocal trading arrangements, and the very low price of sows on the domestic market. Owners must absorb the loss on such exports, and the increased shipments show that no other outlet is available.

No measures were adopted for disposing of surplus breeding stock, and hog raisers have been left to find such markets as are available. Slaughter of sows and boars in Denmark makes up only about  $1\frac{1}{2}\%$  of the total slaughter a/. This low proportion of sows in total slaughter can be explained only by the very high fertility of Danish sows, the fact that they are proven breeders and are replaced after reaching a greater age than is customary in the United States, and that sows make up about half of the live hog exports. Sows that are slaughtered for home consumption go principally to the sausage and chopping trade.

#### RESULTS AND EFFECTIVENESS OF PLAN

##### 1. Slaughter, Consumption and Prices.

Hog numbers in Denmark (Statistical Appendix Table II) are declining, but the decline indicated by the January and April, 1933, census is the result of low prices in 1932, as the control had not been in operation long enough to become effective. The decline shown in the July, 1933, census is also the result of the low prices but the marked reduction in numbers of bred sows is attributed to operation of the card system and impossibility of obtaining unlimited numbers of cards. In September, officials of the Hog Regulation Committee expected that production and supplies would be keeping with English and home demand by late 1933 or early 1934, provided there were no further drastic reductions in the British quota. Since September, however, the Danish quota up to February 1 has been further reduced by

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a/ Based on statement by Agricultural Council officials. During 3 certain weeks when sows were being disposed of because of the card system, slaughter was as follows:

<u>Total slaughter.</u>	<u>Sow slaughter.</u>
106,000	2,505
126,000	2,621
133,000	2,604

Slaughter in other weeks was similar.



about 16 per cent and there are possibilities of a further reduction after February 1.

Total inspected slaughter has declined as follows:

1st six months 1932	-	4,053,657
2nd " " "	-	3,787,342
1st " " 1933	-	3,408,464

The reduced slaughter is the result of a decline in production, although a part of the decline in the first six months of 1933 was caused by holding back deliveries under the card system. Deliveries of hogs without cards have been comparatively small. During June, July and August only about 1,000 were delivered weekly, or about 12,000-13,000 for the three month period.

The card system has resulted in irregularities in deliveries. Immediately after the effective date of a new card issue, deliveries show a marked increase, and as the cards are used up deliveries decline. This suggests holding back hogs and deferred feeding practices. Officials expect increased numbers of hogs without cards to be delivered in September, October and November, and unless they have wrongly estimated the supply situation, this increase in deliveries will clear up most of the existing surplus of bacon hogs.

Weekly slaughterings of bacon weight hogs for home consumption which formerly ran around 15,000-16,000 head, have declined by about 1,000 head. This decline in home consumption is small in view of much higher prices and may be attributed to the fact that Danish wage levels have not been reduced, and that there has been an improvement in the economic situation in Denmark in recent months.

Home slaughter by farmers is not supposed to have shown any appreciable change but data are not available. Any tendency to increase home slaughter would likely be offset by selling surplus sides to producers at low prices.

Slaughter of pigs weighing under 110 lbs. and which are not subject to the tax has greatly increased. Such pork must be sold on the home market, and it is competitive with that made from bacon weight hogs. The control agency is not alarmed about this increase and the slaughter of pigs weighing 110 lbs. is helping to reduce the surplus. Pork made from pigs under 110 lbs. live weight is a new thing in Denmark, and heretofore has come largely from runts, sick pigs and ne'er-do-wells. Some producers have adopted special feeding practices and methods of handling for the production of fat pigs weighing under 110 lbs. and a new method of production for a limited market may develop.

The higher prices for hogs with cards are the result of English market conditions but the maintenance of home pork prices at the English level is the result of limiting supplies to the quantity that could be moved at that price. The prices of sow pork, over which there is no control, have not followed the course of prices of bacon hogs.

The seasonal tendency is for feeder pig prices to rise during the May-November period. This year, however, feeder pig prices (Statistical Appendix Table III) have declined as the card issue has become more limited, and feeder pig prices are now at an unprofitable level.

## 2. Effects on Dairy and Feed Industries.

The dairy industry will benefit from the present hog scheme. The clause which bases one card on each 4,400 lbs. skim-milk creates an increased demand for skim-milk, even though it is only the basis, and actual card issue depends on probable demand for bacon and pork. At present 4,400 lbs. of skim-milk have a value of \$8.48 while one hog card has a value of approximately \$11.88. Consequently some farmers are increasing their takings of skim-milk with the hope of improving their position in future card allotments. Reducing the skim-milk basis to 3,300 lbs. on January 1, 1934, will further increase the demand for skim-milk for card securing purposes.

Dairy farmers are the ones most interested in hog production and the ones who receive most of the cards. With the higher hog prices a greater return will be had from skim-milk fed to hogs. As hog numbers decrease skim-milk will make up a greater proportion of the hog ration. Should grain prices rise as appears likely from the proposed tariff, there will be an added incentive for increased use of skim-milk. It does not appear likely that there will be a surplus of skim-milk as a result of decreased hog numbers. Dairy production will probably decline as a result of unprofitable butter prices and the scheme for disposing of unprofitable and surplus cows. The decline in numbers of dairy cows may be partially retarded by the increased demand for skim-milk resulting from the hog scheme.

A reduction in hog numbers will probably be accompanied by reduced grain imports. Domestic grain production is not likely to be greatly influenced by reduced hog numbers alone. A reduction in hog numbers will not release much land for cultivation due to the sty method of handling hogs. A combination of factors is more likely to affect domestic feed supplies.

Denmark is dependent on imports for a part of the grain requirements, and since Denmark has had no grain tariff, Danish grain prices have declined with world grain prices. Grain farming, par-

ticularly specialized grain farming as practised by the large farmers, has become unprofitable. Partly to satisfy the grain farmers and partly to prevent dumping of state subsidized grain in Denmark, a tariff on grains has been proposed. The tariff would be such that the c.i.f. price at Danish ports would be:

Wheat and malting barley.....	per 100 lbs.	\$1.35
Feed barley, oats and mixed grain.....	" " "	\$1.15
Rye and corn .....	" " "	\$1.06

### 3. Short and Long Time Effectiveness.

As a short time measure for disposing of the surplus and speeding up a reduction in numbers the scheme has been fairly effective. The development of the cooperative system, methods of marketing, and the control exercised by the Ministry of Agriculture have facilitated operation of the scheme. The natural decline in numbers resulting from the low hog prices of 1932, and the higher bacon prices in England which have resulted from the quota have also aided the scheme materially. The decline in numbers has not been as rapid as officials have desired because many producers held on for a while hoping for and expecting an increase in the quantity which could be shipped to England. Tightening up on the card issue and increasing the amount of the special fee has corrected this idea. Reduction in numbers appears to be in full swing.

The present scheme does not absolutely restrict production to a fixed number of hogs, but surplus production is discouraged by the card and fee system. The time lag between discouraging or encouraging production and the actual marketing of bacon hogs is such that more attention to long time production plans will likely be necessary and it appears that other measures may have to be adopted if production is to be controlled or stabilized at some desired level. Some leaders have proposed licensing sow holdings, and other methods. Some of the leading economists have criticized the scheme and the Hog Regulation Committee for not giving more consideration to the long time aspects. They maintain that production is being discouraged too severely and that a shortage will occur in early 1934. These critics have not taken into consideration the recent cut in the British quota in November a/ and possibilities of further reductions.

The Hog Regulation Committee has not fully considered long time measures but in fairness to the Committee it must be pointed out that even had they wished to consider long time production the present situation is too uncertain for them to arrive at any definite

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a/ Effective November 10 to February 1 the Denmark portion of the British Quota was further reduced to 37,000,000 lbs. monthly.



plan. Under the Anglo-Danish treaty, Denmark is guaranteed 62% of England's import of bacon and hams. The tonnage which can be shipped under that agreement is not known and cannot be known until there is more information regarding the ability of the British hog producer to supply the deficit caused by the limitation of imports. The British appear determined to go through with the proposed scheme for reorganizing the British hog industry, and it further appears that there will be additional reductions in the foreign quota if British hog prices are to be maintained at levels remunerative to English producers. The Hog Regulation Committee appreciates the situation and is concerning itself with the disposal of the surplus and reducing production.

Control measures are both new and objectionable to Danish farmers. They have been accustomed to solving their own problems through their own organizations. In spite of dissatisfaction over the present scheme the hog producers feel that it is their scheme and that they are operating it themselves. There is no certainty about the lines which future measures will follow, if and when they are adopted.

TABLE I.

## DANISH HOG AND CATTLE NUMBERS. MILK PRODUCTION AND GRAIN SUPPLIES

Year	: Number : : Hogs : : a/ : : : : : : :	: Number : : All : : Cattle : : a/ : : : : :	: Milk : : pro- : : duc- : : per : : cow :	: Total : : Milk : : Produe : : tion :	: Grain : : pro- : : duc- : : tion :	: Imports : : of : : grain :	: Exports : : of : : grain :	: Net : : Grain : : sup- : : plies :	: Hog : : Index : : Index :	: Milk : : produc- : : tion : : Index :	: Net : : Grain : : Supplies : : Index :	: Average of years listed-100
	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000
	: 527	: 1,470	: 899	: 1,536	: 2,047	: 161	: 212	: 1,995	: 22.89	: 42.05	: 57.19	
1881	...	...	...	...	...	...	...	...	...	...	...	...
1883	...	...	...	...	...	...	...	...	...	...	...	...
1893	...	...	...	...	...	...	...	...	...	...	...	...
1898	...	...	...	...	...	...	...	...	...	...	...	...
1903	...	...	...	...	...	...	...	...	...	...	...	...
1909	...	...	...	...	...	...	...	...	...	...	...	...
1914	...	...	...	...	...	...	...	...	...	...	...	...
1915	...	...	...	...	...	...	...	...	...	...	...	...
1916	...	...	...	...	...	...	...	...	...	...	...	...
1917	...	...	...	...	...	...	...	...	...	...	...	...
1918	...	...	...	...	...	...	...	...	...	...	...	...
1919	...	...	...	...	...	...	...	...	...	...	...	...
1920	...	...	...	...	...	...	...	...	...	...	...	...
1921	...	...	...	...	...	...	...	...	...	...	...	...
1922	...	...	...	...	...	...	...	...	...	...	...	...
1923	...	...	...	...	...	...	...	...	...	...	...	...
1924	...	...	...	...	...	...	...	...	...	...	...	...
1925	...	...	...	...	...	...	...	...	...	...	...	...
1926	...	...	...	...	...	...	...	...	...	...	...	...
1927	...	...	...	...	...	...	...	...	...	...	...	...
1928	...	...	...	...	...	...	...	...	...	...	...	...
1929	...	...	...	...	...	...	...	...	...	...	...	...
1930	...	...	...	...	...	...	...	...	...	...	...	...
1931	...	...	...	...	...	...	...	...	...	...	...	...
1932	...	...	...	...	...	...	...	...	...	...	...	...

a/ As of July in years indicated. b/ From 1920 the south part of Jutland is included. c/ From the country districts only. d/ Less than 500 tons. Data furnished by Agricultural Economics Research Bureau, Copenhagen.

TABLE II  
DANISH HOG CENSUS 1/

Classification	15th Jul., 1929	15th Jul., 1930	15th Jul., 1931	15th Jan., 1932	20th Jun., 1932	19th Nov., 1932	23rd Jan., 1933	18th Apr., 1933	15th Jul., 1933
	000	000	000	000	000	000	000	000	000
	Head.	Head.	Head.	Head.	Head.	Head.	Head.	Head.	Head.
Boars (4 months and over)	19	24	31	30	29	28	28	26	25
Sows (4 months and over)									
Pregnant Gilts	310	390	430	355	40	45	49	45	41
Other Pregnant sows					296	276	259	258	237
Sows with litters					115	112	121	119	116
Barren sows	124	190	192	195	42	51	45	39	33
Condemned sows									15
Total	434	580	622	550	493	484	474	461	442
Fat pigs (over 132 lbs. wgt.)									826
Pigs (77 lbs. to 132 lbs.)	3,165	4,268	4,791	4,907	4,364	4,314	4,041	3,997	998
Pigs (under 77 lbs. wgt.)									1,064
Suckling pigs									1,028
Total	3,618	4,872	5,444	5,487	4,886	4,826	4,543	4,384	4,383

1/ A new classification has been adopted for pigs intended for slaughter. Condemned sows refers to those animals which are to be compulsorily slaughtered. Source: Empire Marketing Board.



TABLE III. Monthly average prices of items significant  
in the Danish bacon industry, 1932 and 1933 a/

Date	: London im- : porter to : wholesaler : green bacon : price in	: Cooperative : bacon fac- : tory to farm- : er top price : for hogs dead : weight basis	: Bacon fac- : tory price : hogs with- : out cards : dead weight : dead weight	: Amount of : special : fee paid : by bacon : factories : dead weight	: Special : fee paid : by slaught- : er houses	: Køge : market : feeder : pig : prices
	: Cents per : pound	: Cents per : pound	: Cents per : pound	: Cents per : pound	: Dollars : per head	: Dollars : per : head
<u>1932</u>						
Jan...	6.65- 7.96:	5.31				\$1.76
Feb...	7.05- 8.02:	5.61				\$1.80
Mar...	7.24- 9.02:	6.14				\$1.88
Apr...	7.89- 9.31:	6.33				\$1.97
May...	9.80-10.61:	6.55				\$1.93
June...	8.22- 9.62:	6.50				\$2.37
July...	8.27- 9.19:	6.58				\$2.42
Aug...	10.20-10.54:	8.01				\$2.71
Sept...	9.93-10.36:	7.50				\$3.08
Oct...	7.52- 8.06:	6.24				\$2.53
Nov...	8.09- 8.53:	6.11				\$2.52
Dec...	7.46- 9.43:	6.48				\$2.66
<u>1933</u>						
Jan...	7.69- 8.64:	6.14				\$2.37
Feb...	8.79- 9.41:	7.06				\$2.59
Mar...	10.28-11.24:	8.34				\$3.00
Apr...	11.50-12.17:	9.41	<u>b/</u> 4.34	<u>b/</u> 5.28	<u>b/</u> \$7.58	\$3.02
May...	12.75-14.21:	10.65	5.40	5.24	\$7.53	\$3.01
June...	11.71-13.30:	10.84	5.19	4.85	\$7.01	\$2.50
July...	14.89-15.73:	10.97	6.88	4.99	\$7.27	\$2.73
Aug...	16.61-17.16:	11.66	7.12	5.66	\$8.25	\$2.57
Sept...	<u>c/</u> 17.86-18.33: <u>c/</u>	11.58	<u>c/</u> 6.14	<u>c/</u> 7.65	<u>c/</u> \$11.04	<u>c/</u> \$2.54

Source: Landbrugsraadets Meddelelser. a/ Conversions made at the average rate  
for each month indicated. b/ Two weeks. c/ Three weeks.

TABLE IV

Danish Exports of Bacon and  
Pork

Country of destination	Jan. 1 - Sept. 24					
	1929	1930	1931	1932	1932	1933
	Short tons	Short tons	Short tons	Short tons	Short tons	Short tons
England...	273,131	337,277	410,103	422,781	316,966	245,832
Germany...	1,059	277	2,553	1,996	1,679	464
Belgium...	a/	a/	379	854	505	2,999
Italy.....	a/	a/	6	3,424	2,537	3,973
Others.....	139	179	1,559	588	567	346
Total....	274,329	337,733	414,600	429,643	322,254	253,614

Source: Landbrugsraadets Meddelelser. a/ Included with others.

TABLE V

Monthly Danish Hog-Feed Ratios a/

Month	1932	1933	Hogs with cards 1933	Hogs without cards 1933
January ...	7.1	8.1		
February...	6.8	10.0		
March.....	6.9	11.7		
April.....	6.7	b/ 12.3	c/ 13.1	c/ 5.9
May .....	7.4		12.8	6.5
June .....	7.7		11.7	6.0
July.....	7.9		11.9	6.8
August.....	9.4		12.8	7.2
September..	9.3		12.2	5.5
October....	8.1			
November...	8.2			
December...	9.1			

Source: Landbrugsraadets Meddelelser. a/ Danish hog feeding operations are regarded as "breaking even" when the price of 8 pounds of corn equals the price of 1 pound of hog, dead weight basis. b/ Average to April 15. c/ Average beginning April 15.

TABLE VI

Danish Live Hog Exports

Country of destination	: Jan. 1 - Sept. 24					
	: 1929	: 1930	: 1931	: 1932	: 1932	: 1933
	: <u>Number</u>	: <u>Number</u>	: <u>Number</u>	: <u>Number</u>	: <u>Number</u>	: <u>Number</u>
Germany .....	) 49,149	) 57,067	) 33,426	: 2,245	: 1,594	: 2,830
Saar .....	)	)	)	: 10,808	: 7,521	: 9,645
Italy .....	5,665	: 5,053	: 2,161	: 10	: <u>a/</u>	: <u>a/</u>
Czechoslovakia..	838	: 1,189	: 1,150	: 6,553	: 4,614	: 5,270
Switzerland.....	487	: 3,677	: 28	: <u>a/</u>	: <u>a/</u>	: <u>a/</u>
Austria .....	31	: 931	: 593	: 6,545	: 2,814	: 13,276
Belgium.....	<u>a/</u>	: <u>a/</u>	: 57	: 177	: 177	: 5,693
Others .....	111	: 156	: 36	: 1,787	: 641	: 1,206
Total .....	56,281	: 68,073	: 37,451	: 28,125	: 17,361	: 37,920

Source: Landbrugsraadets Meddelelser: a/ If any, included with others.

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